**HR EMPLOYEE ATTRITION**

**Summary:**

**Understanding and Predicting Employee Turnover at Acme Corporation –**

Acme Corporation, a prominent tech company, is grappling with a pressing issue of escalating employee turnover rates. This phenomenon poses substantial challenges to the organization, impacting team cohesion, project consistency, and overall employee morale. To combat this problem, Acme Corporation has embarked on a data-driven initiative aimed at leveraging data analytics and machine learning to gain insights into the factors contributing to employee turnover and predict future attrition.

**Objective:** This project aims to provide insights into the factors influencing employee attrition and predict which employees are likely to leave the company. Let's refine the project to make it more closely aligned with real-time scenarios and address live problem statements within an organization.

**Business Intelligence (BI) Analysis:**

**1.** **Data Exploration**

**a.**  **Connect to Data Sources:**

* Open Power BI Desktop.
* Click on "**Get Data**" from the Home tab.
* Choose the data source connector from Text/CSV.
* Then select the CSV file then we have two option **Load** and **Transform**. Then Click on **Transform** because I want to use Power Query for Data Cleaning.

**b. Data Transformation Steps:**

* **Read and Understand hole data Carefully**
* **Identify Incorrect Column Names -** Review the list of column names to identify any incorrect names that need to be corrected.
* To correct a column name, click on the column header to select it. Then, right-click on the column header and choose "Rename." Alternatively, you can simply double-click on the column header.
* Type the correct name for the column, including any spaces or formatting adjustments needed.
* Press Enter to confirm the changes.

**c. Check Duplicate Rows or Columns:**

* Right-click on the selected column header.
* From the context menu that appears, choose the "*Remove Duplicates*" option.

**d. Check the datatype of Columns:**

* Click on the header of the column to select it. This will highlight the entire column.
* Right-click on the selected column header.
* From the context menu that appears, hover over "Change Type."
* A submenu will appear displaying various data types (e.g., Text, Whole Number, Decimal Number, Date, etc.).
* Select the appropriate data type for the column. If the data type matches what you expect, you can leave it unchanged. Otherwise, select the correct data type.
* But all the columns of datatypes are matches with data so I cannot change anything in this.

**e. Review Changes:**

* After changing the Columns Name, Check Duplicate’s, Check data type, review the data in the column to ensure that it appears as expected.

**f. Close and Apply Changes:**

* Once I can do all the things necessary Changes, click on “Close & Apply”. Then all the changes are change in our data and our data was load.

**2. Write all the Major Steps of Dashboard.**

* Understand the data.
* Create KPI of Total Employees, Working Employees, Count of Attrition, Average year of Company Employees.
* Create sum measures for find out deep analysis of KPIs.
* Sum of Employees by Education Field.
* Create a table for All types of Job Role with Job Satisfaction.
* Create a new column for Salary Range If Monthly Income <5000 it come in Group D, If >=5000 & <10000 its come in Group C, If >=10000 &<15000 its come in Group B and If >=15000 &<20000.
* Analysis all the Employees count by Job Role and Business Travel.
* Analysis all the Employees by their Work Life Balance.
* Analysis some important columns like Gender, Over Time, Marital Status with help of Slicer.

**3. Visualization**

**a. Create a new report**: In Power BI, reports are where you build your visualizations. To create a new report, click on the "*Report*" tab in the left-hand pane.

**b.** **Visualization:**

* In Report view at the right side click on the **Visualization** and go to the Canvas settings click on Vertical alignment and select Middle for Standard things.
* Then Click on Canvas Background then select colour which I prefer for Dashboard and reduce the Transparency to see clearly.
* Go to the Home tab which is on top side and Click on **Text Box** for write the Name of Dashboard.
* To Create KPI **(*Key Performance Indicator***) go to **Visualization** and click on Build Visual select (Card) and go to the Data which near to Visualization then click on Employee Count Column. Which is shown Total Number of Employees which is 1470.
* **To add a new Measure in data go to the Report view see on the tops one option is there Measure Tools in which click on new measure and write the calculation of Measure using DAX** [ Working Employees = COUNTROWS(FILTER('hr attrition','hr attrition'[Attrition]="No"))].Then select card for next KPI then select Working Employees1 column its shown .To find out how many total employees are working in company which is 1233.[**83.87%**]and Remain Employees are comes in Attrition difference throw Create one more Measure Attrition Difference = SUM('hr attrition'[Employee Count]) - 'hr attrition'[Working Employees].
* Then I was giving some design to First KPI and then I was using Format painter which is give exactly design to another KPI’s go to Home Tab and click on Format Painter.
* To create new KPI of Attrition Percentage create new measure which name is Attrition in Percentage = 'hr attrition'[Attrition Difference]/SUM('hr attrition'[Employee Count]) then go to formatting and click on Percentage sign[%].
* Then go to Build visual which in Visualization select Pie Chart to define Composition select Education Field in Legend and Count of Employees in Values its show all the Education field with count of employees.
* To create a Table, go to Build visual which in Visualization select Matrix and select Job Role and Job Satisfaction which is shown the Satisfaction by Job Role **which means Low Satisfaction:** If 1 represents low satisfaction**, Moderate Satisfaction**: If 2 represents moderate satisfaction, **High Satisfaction**: If 3 represents high satisfaction, **Very High Satisfaction**: If 4 represents very high satisfaction by the Job Roles. Create New Column in data which main purpose is to separate by their Groups Like – Group A, B, C, D. which is represent the Level of employees by Education, Monthly income, and level of Employees. Example – If Monthly Income <5000 it come in **Group D**, If >=5000 & <10000 its come in **Group C**, If >=10000 &<15000 its come in **Group B** and If >=15000 &<20000 its come in **Group A.** Measure[ Salary Range = IF('hr attrition'[Monthly Income] < 5000, "D",IF('hr attrition'[Monthly Income] >= 5000 && 'hr attrition'[Monthly Income] < 10000, "C",IF('hr attrition'[Monthly Income] >= 10000 && 'hr attrition'[Monthly Income] < 15000, "B",IF('hr attrition'[Monthly Income] >= 15000 && 'hr attrition'[Monthly Income] < 20000, "A", BLANK())))).Then select Stacked Column Chart to represent the groups.]
* Select **Bar chart** to show how many employees are doing business Travel for its Job role. Go to Build visual which in Visualization select Bar chart select Job Role which is drop in Y axis and in X axis Count of employees as well as in Business Travel drop in Legend.
* For Job Satisfaction and Salary Range analysis in this chat show how many employees are satisfy by their Job Role this point is very important to see the attrition case and we can also see that the employee’s attrition is rate increase because of salary or not with help of Salary Range. Go to Build visual which in Visualization select Column Chart select Job Satisfaction in X axis, Y axis count of employees and in Salary Range drop in Legend.
* For the Work life Balance and employee’s analysis in this chart How many employees are balance the personal life and as well as Job. Go to Build visual which in Visualization select area chart and select Work life balance in X axis and Count of Employees in Y axis.
* To find out more deep analysis I can add slicers in Gender, Over time, Marital Status. Go to Build visual which in Visualization select Slicer go to Visual select option Tile then adjust in Dashboard.
  1. **Descriptive Analytics**